



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,577	12/27/2004	Daniel Levner	904.0102.U1(US)	2523
29683	7590	01/30/2006	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			PAK, SUNG H	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/519,577

Applicant(s)

LEVNER ET AL.

Examiner

Sung H. Pak

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-62 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-8, 16-19, 30, drawn to an optical device comprising waveguides and supergratings.

Group II, claim(s) 9-10, drawn to an NxM system for switching optical signals.

Group III, claim(s) 11-15, drawn to a device for physically separating wavelength channels.

Group IV, claim(s) 20, drawn to a device for monitoring magnitude of radiation.

Group V, claim(s) 21-22, drawn to a device for changing optical signal power by power removal.

Group VI, claim(s) 23-24, drawn to an array of waveguide arranged in a grid.

Group VII, claim(s) 25-29, drawn to a device for imposing wavelength dependent delay.

Group VIII, claim(s) 31-35, drawn to a laser comprising a gain medium.

Group IX, claim(s) 36-37, drawn to a device for combining signals.

Group X, claim(s) 38-43, drawn to a device with asymmetric optical means.

Group XI, claim(s) 44-45, drawn to a device with lateral pixels.

Group XII, claim(s) 46, drawn to a three dimensional optical device with 2 dimensional supergrating.

Art Unit: 2874

Group XIII, claim(s) 47-61, drawn to a method of forming a supergrating.

Group XIV, claim(s) 62, drawn to a method of forming a supergrating using a filter function.

The inventions listed as Groups I-XIV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of group I is the claimed arrangement of waveguide structures and the grating structures, including a supergrating structure.

The special technical feature of group II is the switching arrangement using a first row of  $N/2$  input couplers and a final row of  $M/2$  couplers.

The special technical feature of group III is the structure for physically separating optical signal channels using a set of supergrating structure.

The special technical feature of group IV is the structure for monitoring transmitted optical signals.

The special technical feature of group V is the structure for removing power from the transmitted optical signals.

The special technical feature of group VI is the arrangement of waveguide array and a series of wavelength dependent supergratings.

The special technical feature of group VII is the structure for imposing wavelength dependent group delay to the transmitted optical signal.

The special technical feature of group VIII is the lasing structure having a resonance cavity with supergrating structures.

The special technical feature of group IX is the structure for combining optical signals.

The special technical feature of group X is the asymmetric optical means having different attenuation in opposite directions.

The special technical feature of group XI is the lateral pixels that represent analog profile that forms a design set of wave fronts.

The special technical feature of group XII is the three-dimensional optical device having quantized pixels formed in certain locations.

Art Unit: 2874

The special technical feature of group XIII is the method of forming a supergrating.

The special technical feature of group XIV is the method of forming a supergrating using a particular filter function.

Since the special technical feature of each group is exclusive of the special technical feature of other groups, unity of invention is lacking.

A telephone call was made to Gerald Stanton to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

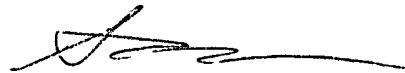
Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sung H. Pak  
Primary Patent Examiner  
Art Unit 2874